

DOCUMENT RESUME

ED 356 306

UD 029 132

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TITLE Opportunity To Learn: Issues of Equity for Poor and Minority Students.
INSTITUTION National Center for Education Statistics (ED), Washington, DC.
REPORT NO NCES-93-232
PUB DATE Jan 93
NOTE 69p.
PUB TYPE Reports - Research/Technical (143) -- Tests/Evaluation Instruments (160)

EDRS PRICE MF01/PC03 Plus Postage.
DESCRIPTORS Data Analysis; Disadvantaged Youth; *Economically Disadvantaged; *Educationally Disadvantaged; Elementary Secondary Education; *Equal Education; High Risk Students; Mail Surveys; *Minority Group Children; Outcomes of Education; Poverty; Public Schools; *School Districts; School Personnel; School Statistics; Urban Schools
IDENTIFIERS *Educational Information; *Opportunity to Learn

ABSTRACT

This study evaluated how public school districts collect, disaggregate, and analyze student outcome data. A survey was mailed to research directors and test directors responsible for assessments in 142 public school districts to determine if the districts have the capacity to analyze opportunity to learn (OTL) data, what their interest level is in the data, and what obstacles they face in collecting and analyzing OTL data. At least 20 percent of the respondents received follow-up telephone interviews. District size, urbanicity, and geographic area were analyzed using open-ended responses. Ninety-one (64 percent) of the school districts responded. Respondents ranged from program evaluators to assistant superintendents; 56 percent were directors and managers of research and evaluation, and 61 percent came from urban public school districts. Results show that OTL is virtually an unknown concept in the United States. Students' differences in academic achievement are not being related to an analysis of OTL. Most districts limit test data disaggregation to race/ethnicity. Lack of OTL information hampers teachers' abilities to improve their teaching practices. Policy recommendations include: (1) raise the awareness and knowledge levels of all parties responsible for educating students; and (2) train public school district personnel to use OTL information, encourage OTL data collection, and do more research on the quality of instructional delivery. Fourteen data tables, the OTL Questionnaire, "Opportunity To Learn: The Need for a Comprehensive Definition for Substantive Data Analysis" (Floraline I. Stevens), and the OTL Survey Follow-Up Interview Protocol are included. (Contains 49 references.) (RLC)

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OPPORTUNITY TO LEARN

Issues of Equity for Poor and Minority Students

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OPPORTUNITY TO LEARN

Issues of Equity for Poor and Minority Students

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January 1993

This work was performed while the author was the American Educational Research Association's Senior Research Fellow at the National Center for Education Statistics (NCES). The results, interpretations, and recommendations in this paper are those of the author and do not reflect findings, recommendations, or policies of NCES.

Acknowledgments

This paper was prepared as part of my fellow's research project at the National Center for Education Statistics (NCES) from August 1991 through June 1992. The funding came from the American Educational Research Association (AERA). I especially appreciate the help and assistance given to me by the staff at AERA, particularly, Bill Russell, Executive Director, Jerry Sroufe, Jaime Hitchcock, and Linda Goff.

Special thanks to the members of the AERA Grant Advisory Board and especially its chair, Richard Shavelson, for their vision and support of a fellows program at NCES.

Heartfelt thanks to the 99 public school directors who responded to the survey. Their cooperation was indispensable.

Emerson Elliott, Commissioner of Education Statistics, provided me with encouragement and insightful advice throughout the project. Many NCES staff members provided advice and reviewed earlier versions of this paper, including Associate Commissioners Jeanne Griffith (Fellows Liaison), Shirley Jackson, and Paul Planchon; Sharon Bobbitt, Salvatore Corrallo, Lee Hoffman, Dan Kasprzyk, Jeff Owings, Lois Peak, John Ralph, and Mary Rollefson. Special thanks to Lois Peak for sharing with me many articles on international research.

John Grymes of NCES was indispensable to this project. His professional help and advice, as well as his computer analysis of the survey data, made it possible for me to write the results for this paper in a timely manner. He was a dedicated assistant during this entire period. Special thanks also to Mark Root at the Council of the Great City Schools for producing the charts in this report.

The opportunity to be involved in NCES activities provided me with information that assisted me in organizing the contents of this paper. The acceptance of my role as a research fellow by the NCES staff made this experience most positive.

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The Background: Raising the Issue

Opportunity to learn the designated curriculum for a grade level or age group is a major equity issue for students who are at risk of not developing academically to their fullest potential. As a group, at-risk students are often categorized as poor, disadvantaged, or from the underclass. Past and current studies of at-risk students, most of whom are in public schools, have centered on the demographics of poverty and minority membership (CPRE, 1991; Orland, 1990; Oakes, 1990; and Coleman, 1966). Whatever terms used to describe these students, the principal issue is that we are not currently meeting the educational needs of these students. If this is due to explicit or implicit policies that make portions of our population expendable, then we are not meeting the needs of the nation economically, socially, or morally.

The coming technological and information-based era requires more skilled and talented persons to emerge from our schools. Policymakers, teacher educators, school administrators, and particularly classroom teachers must consider the issue of equity in preparing these students for the world. Equally important is whether students are being given the opportunity to learn what is needed.

The Special Study Panel on Education Indicators in Education Counts (1991) focused on the issue of opportunity to learn when they said, "The concern for educational equity is based on a fundamental belief in fairness. It transcends political boundaries and the narrow issues of interest groups. In American society, the values of fairness and justice are deeply held..." and, "We need to know if students at risk have access to the full range of educational opportunities, what kinds of learning opportunities are provided, and how well-tailored they are to the educational needs of these students."

At the State Level: Reforms with Poor Results

The school reform movement in the United States called for drastic changes in public school education to meet the needs of at-risk students and the nation. Many solutions were offered and tried. On the national level, education reforms included new national goals, New American Schools, world class standards, a national curriculum, and measurements of the nation's educational health.

States have tried graduation course requirements, accountability indicators, student competency testing, teacher competency testing, teacher certification, curriculum revisions, and adoption of new curriculum frameworks. Many states expended tremendous sums of money to implement their reform solutions. Unfortunately, despite all the reform efforts, academic achievement continues to be low for poor and minority students in most large, urban public school districts. Obviously, something is missing.

Why? One School District's Experience

In the mid-1980s, the board of education in a large urban school district in California responded to reports of low academic achievement among its students, most of whom were poor and minority, with two major programs. One was a major bilingual education program, and the other was a special program in ten elementary schools with African American student populations of 60 percent or more. This special program's evaluation included assessing student progress in improving academic achievement in reading, mathematics, and English language arts over a 5-year period.

Assessment of grade-level, subject-matter skills/objectives would determine progress toward meeting the overall goal. The teachers in the ten schools decided to administer interval or segmented tests (clusters of items for a few skills for each subject area) every 8 weeks. These tests provided information to the teacher about their students' mastery of grade-level skills/objectives prior to the district's end-of-year, norm-referenced testing program.

When the interval test information was collected and analyzed, the results for some classrooms showed that over 80 percent of the students had not mastered some of the skills/objectives for the interval. The testing unit queried some of the teachers about whether or not the subject matter skills/objectives were taught. Most of the teachers responded that they covered the skills/objectives in their classrooms. However, in subsequent grade level meetings, these teachers asked questions about what were appropriate or alternative strategies for teaching these skills. Their questions suggested that some teachers had not taught the skills, or if they had, their instructional delivery was not effective enough for the students in their classrooms to master the subject matter.

The Teacher Is Critical to Student Academic Achievement

At this point, questions arose about whether the teachers at these and other schools in the district understood fully what to do with reports of student academic achievement scores when the scores were not disaggregated and there was no accompanying information provided about student exposure to, and coverage of, the subject matter. Program staff and teachers realized that students who were not exposed to grade-level, subject-matter skills and concepts would not score as "average" on the district's grade-level, norm-referenced tests. Instead, the test data would report low academic achievement with the incorrect assumption that the students did not work hard enough or were not capable of learning the subject matter, when in fact, student performance was tied critically to the performance of their classroom teachers.

Although originally designed to monitor students' academic progress, the interval tests provided interesting information about students' access to the curriculum and raised questions about the quality of instructional delivery.

The result was the emergence of the issue of opportunity to learn. Because the teacher's role is important in determining opportunity to learn, this paper focuses on the teacher's role in this paradigm (Bloom, 1976; Goodlad, 1983; Oakes, 1983). Administrators need to help teachers and other support staff in understanding the issue's impact on instructional equity and to assist teachers in implementing instructional models and programs that will promote access to learning for poor and minority students (Murphy, 1988).

The Importance of External Support

Many poor and minority students do not live in environments that provide support to make up for any deficiencies that might exist in the school. In contrast, students from most middle and upper class homes have supportive, literate, and learning environments to supplement and enrich school instruction (Adams, 1990). Therefore, quality of instruction is of paramount importance for poor and minority students or any other students from inadequate backgrounds.

As Adams explained, students who arrive at school behind in their prereading skills will not test as "average" or above, will be judged as slow learners or educationally handicapped, and will be treated accordingly. Based on this information, it is apparent that without intervention, the race could be lost for these students before it has even begun. From the preschool level on, opportunity to learn has significant importance for poor and minority students.

Creating a "Lower Class"

In an article in Phi Delta Kappan (1991), Bracey noted that there are menial jobs in our country that must be performed and that over-education could generate social problems because well-educated people will not want to do the menial work. Writing that some people believe "we must continue to produce an uneducated social class" to do this menial work, Bracey acknowledged the equity or equal opportunity issue in this viewpoint.

Researchers, policymakers, practitioners, and the public-at-large need to question the morality of those who hold this viewpoint. Who decides who will be relegated to this role? In reality, no group willingly or knowingly would choose to be at the bottom of the socioeconomic ladder. However, by not acting on the issue of opportunity to learn in our public schools, we are actively relegating a group of students to the "lower class."

Kirst (1991) wrote, "The low levels of education found in big cities and among minorities are appalling and are a factor in America's weak showing in international comparisons of least-skilled workers." Why is education in big cities failing minority and poor students? Past research blamed the poor academic performance of these students on their poverty and minority status (Coleman, et al., 1966). This popular and misguided belief assumed

that schools could not change these students' academic performances. However, subsequent research shows that academic performance, no matter the students' backgrounds, can change with an improvement in the quality of instruction. Specifically, changes in how time is spent in the classrooms, how learning is organized, what curriculum materials are used, what attitudes are reinforced, what beliefs and values are operant, and how supportive the conditions for teaching and learning are will make a difference in achievement (Sirotnik, 1990; Brophy and Good, 1986).

Time to Consider New Variables

Under the circumstances, we must seriously question the accuracy of reports about student academic achievement. When we consider student outcome data (test scores, etc.) in relation to their opportunity to learn, we realize a different kind of inquiry is needed (Goodlad, 1983; Goodlad and Oakes, 1988; Murphy, 1988; Sirotnik, 1990). Investigation of student outcomes should include these questions:

1. What is opportunity to learn?
2. What is the capacity of the public school districts to collect and use opportunity to learn information in their analyses of student outcome data?
3. How interested are public school districts in collecting and using opportunity to learn data in analyzing student outcome data?

Understanding Opportunity to Learn

The powerful concept of opportunity to learn has been used principally to explain differences among students in comparative international studies of educational achievement and in some small-scale national research studies. Variables gleaned from these studies focus on what teachers do in their classrooms when they are teaching students. The variables are: (1) content coverage; (2) content exposure; (3) content emphasis; and (4) quality of instructional delivery (Table 1). With these variables to build a conceptual framework, those responsible for analyzing and reporting student outcome data could investigate more substantively the reasons for the differences they perceived in academic achievement. The framework also provides a basis for meaningful recommendations to improve teaching and to meet students' educational needs (Table 2).

According to the studies:

- * *Content coverage* investigates whether or not students covered the core curriculum for a particular grade level or subject area (for example, grade 4 reading or algebra).
- * *Content exposure questions the time allowed and the depth of teaching (time-on-task).*
- * *Content emphasis* determines which topics within the curriculum are selected for emphasis and which students are selected to receive low or higher order skills.
- * *Quality of instructional delivery* reveals how the teaching practices in the classroom impact student academic achievement (coherent presentation of lessons).

Earlier studies based their definition of opportunity to learn principally on how the variables were analyzed. They focused on the implemented curriculum by examining content coverage (the overlap of curriculum content and test content), teacher decisionmaking regarding content emphasis, and content exposure. Extensive research on the effects of instructional practices was not connected with the opportunity to learn research. Quality of instructional delivery was viewed as a separate equity issue.

A Look at the National Studies

1. *Content Coverage: Curriculum Content and Test Content Overlap*

Overlap research showed that in many instances curriculum content and test content did not match (Leinhardt, 1983; Leinhardt and Seewald, 1981). These studies confirmed an

Table 1. Opportunity to learn definitions gleaned from research studies

Author	Date of Study	Definition*
1. Walker and Schaffarzick	1974	Content coverage: how many of the items on the test match the curriculum that was taught
2. LeMahieu and Leinhardt	1979	Content emphasis: high student test scores influence content coverage. The content of the curriculum is controlled by the test.
3. Leinhardt and Seewald Leinhardt	1981	Content coverage: how many of the items on the test match the curriculum that was taught.
	1983	
	1987	Content coverage: adequate and timely instruction of specific content and skills prior to taking the test.
		Content exposure: time spent to cover the specific content.
5. Yoon, et al.	1990	Content coverage: when a topic is aligned with a particular course, teachers will validly report if the topic was taught.
6. Wiley	1990	Content exposure: the more time one spends on instructional experiences, the more one learns or time-on-task.
		Content coverage: individual test items determine small units of content covered.
7. Schmidt	1990	Content emphasis: textbooks and materials prepared by teachers were most influential on selection of content to teach. Next, teachers were influenced by course syllabi.
8. Shavelson and Stern Floden, et al.	1981	Content emphasis: content is selected by teachers based on personal experiences, particular proficiency in the topic, topic viewed as important, textbooks used, etc.
	1981	

Table 1. Opportunity to learn definition gleaned from research studies - (continued)

Author	Date of Study	Definition*
9. Goldenberg and Gallimore	1991	Content emphasis: teachers' attitudes lower the learning ceiling for some students which reduces the level and quantity of work students are expected to complete in the classroom.
10. McDonnell, et al.	1990	Content emphasis: curriculum offerings differentiated according to student ability levels. Teachers place different amounts of emphasis on different objectives.
11. Brophy and Good	1986	Content exposure: academic learning is influenced by the amount of time that students spend engaged in appropriate academic tasks. Quality of instructional delivery: teachers first structure new information for students, help them relate it to what they already know, monitor their performance, and provide corrective feedback during the lessons. This applies to any body of knowledge or set of skills. Teachers did not release their students to begin work until it had been explained thoroughly.
12. Stevenson and Stigler, et al.	1992	Quality of instructional delivery: a good lesson is coherent. It is highly organized having an introduction, a conclusion, and a content theme. The teacher is needed to relate the different parts of a lesson to one another, to explain the interrelatedness of the various activities, or coherence is lost.

*Note: The definitions of opportunity to learn are based principally on how the data are analyzed.

Table 2. Opportunity to Learn: A conceptual framework developed from international and national research studies to investigate students' access to the core curriculum.

Variable	Definition
1. Content Coverage (Walker and Schaffarzick, 1974; Leinhardt and Seewald, 1981; Leinhardt, 1983; Winfield, 1987; Yoon, et al., 1990; Wiley, 1990)	Teacher arranges for all students to have access to the core curriculum. Teacher arranges for all students to have access to critical subject matter topics. Teacher ensures there is curriculum content and test content overlap.
2. Content Exposure (Winfield, 1987; Wiley, 1990; Brophy and Good, 1986)	Teacher organizes class so that there is time-on-task for students. Teacher provides enough time for students to learn the content of the curriculum and to cover adequately a specific topic or subject.
3. Content Emphasis (LeMahieu and Leinhardt, 1979; Floden, et al, 1981; Shavelson and Stern, 1981; Oakes, 1990; Goldenberg and Gallimore, 1991; McDonnell et al., 1990)	Teacher selects topics from the curriculum to teach. Teacher selects the dominant level to teach the curriculum (recall, higher order skills). Teacher selects which skills to teach and which skills to emphasize to which groups of students (ability grouping and tracking or regrouping).
4. Quality of Instructional Delivery (Stevenson and Stigler, 1992; Brophy and Good, 1986)	Teacher uses teaching practices (coherent lessons) to produce students' academic achievement. Teacher uses varied teaching strategies to meet the educational needs of all students. Teacher has cognitive command of the subject matter.

important aspect of investigating opportunity to learn--the consideration of curricula and test overlap when test scores are used to judge student and program success.

To determine overlap, Leinhardt asked three questions of teachers with at least 3 to 4 years experience:

1. Did you teach that information this year?
2. Has Student X been taught enough information to answer the item correctly?
3. Can Student X get this item right?

Question 2 was asking whether the teacher had taught the material. Using a blank test, the teacher was asked to go through each item in the test for each child in the class. An overlap estimate (percentage of overlap) was determined by the number of items the teacher claimed to have taught divided by the number of items on the test times one hundred. Leinhardt found that when teachers answered questions about individual children, they were more conservative and precise than with hypothetical or general cases.

2. Content Coverage and Content Exposure

Winfield (1987) investigated the same question about curriculum content and test content when she secured teachers' estimates of test content covered in a first grade Title 1 class in reading. Winfield defined opportunity to learn as the provision of adequate and timely instruction of specific content and skills prior to taking a test. She suggested that opportunity to learn might also be measured by components such as time spent in reviewing, practicing, or applying a particular concept or by the amount and depth of content covered with particular groups of students.

To assess coverage and exposure, examples of items similar to those on the CTBS reading test were constructed using the test format and words from the Dolch first grade reading test. Actual CTBS items were not used. The survey included 25 items similar to those found in the word attack section. Teachers were instructed to respond to each test item by answering survey questions using a series of five-point response scales (For example: None, 1-9 minutes, 10-19 minutes, 20-29 minutes, more than 30 minutes; not at all, yearly, monthly, weekly, daily; and not in curriculum, introduced only, introduced and taught slightly, introduced and taught for mastery, critical objective).

Examples of survey questions were:

1. How much time did you use to introduce this item/concept to Title 1 students?

2. How confident are you that the majority of your Title 1 students have mastered this item/concept?

3. To what extent is this item/concept emphasized in the school reading curriculum for first grade?

Winfield discovered that the teachers of first grade Title I students emphasized word-attack skills more than they did comprehension skills. This finding was contrary to research which noted that instruction in decoding should be accompanied by instruction in comprehension to foster an ability to read independently (Doyle, 1983).

3. Content Coverage

Another overlap study by Walker and Schaffarzick (1974) used multivariate analysis to more accurately determine student academic achievement. They used opportunity to learn the content tested on a standardized test battery as the covariate in the analysis. They warned that failure to consider variation in opportunity to learn the subject matter can result in student differences (test scores) that may be mistakenly attributed to program or student characteristics when the differences may actually lie in the match or mismatch between what is tested and what is taught. Therefore instructional processes in the classroom affect overlap further. If the curriculum taught in the classroom matches what is tested, most students will answer the test items correctly.

4. Content Emphasis: Teacher Decisionmaking

Other studies proposed that opportunity to learn should be investigated in the context of teachers as decisionmakers of the content covered. Floden, et al. (1981) and Shavelson and Stern (1981) showed that teachers choose what they want to emphasize in their classrooms for various reasons. They base their choices on personal experiences, personal proficiency in a topic, perception of certain topics as being more important, professional experiences, past experiences with having to remediate repeatedly certain topics, and influence of past professors, education courses, textbooks, and other authorities.

LeMahieu and Leinhardt (1985) found that students' high test scores influenced content coverage. Since most teachers perceive high test scores as good, they strive to increase the overlap between instruction and test content. Subsequently, tests have a powerful influence on teacher selection of instructional content. The test content controls the opportunity to learn a full curriculum. In this respect, LeMahieu and Leinhardt cautioned against tests assuming "the status of de facto definition of the domain under investigation."

5. Content Coverage

Yoon, et al. (1990) built on previous studies that used teachers' self-reporting content

coverage and investigated the validity of teachers' reports of mathematical content exposure and coverage. Their study was based on the premise that teachers' reports are potentially valuable, efficient, and cost effective.

Yoon and his associates used seven responses taken from the Second International Mathematics Study (IEA, 1982) to collect data on content coverage. Teachers were asked to indicate the degree topics that were covered in each mathematics course that they taught. The response options were: new, extended, reviewed, assumed, taught later, not in the curriculum, and don't know. They found that if a topic was aligned with a course, virtually all teachers who claimed to teach the course chose the response options, "new" and "extended," and student performance on these test items was consistent with teachers' reports of coverage.

6. Content Emphasis

Goldenberg and Gallimore (1991) demonstrated in their case study of Spanish-speaking first grade students in one school that teachers based their attitudes on demographics and background information of the students' parents. The teachers believed that *these* students were not ready for the prescribed first-grade curriculum and were also convinced that the kindergarten students were not ready for reading and writing despite evidence to the contrary. As a result, the teachers reduced the level of schoolwork assigned to the students. They believed that slow and tortuous progress in the reading curriculum was a fact of life and that only a few children would be on grade level by the end of the first-grade.

International Studies

The need to understand differences in student outcome data across nations generated survey items on opportunity to learn in international studies, but information was not solicited about outcomes for poor and minority students. In these studies, items on opportunity to learn inquired principally about curriculum and content coverage, curriculum emphases, and time allocated to instruction in the classroom. The Second International Mathematics Study (SIMS), sponsored by the International Association for the Evaluation of Educational Achievement (IEA), produced a major collection of information on opportunity to learn.

Recent large international studies with items on opportunity to learn included the first and second International Educational Assessment of Progress (IEAP) conducted by the Educational Testing Service and sponsored by the National Center for Education Statistics (NCES). Two additional IEA studies using items on opportunity to learn are the Study of Reading Literacy and, in its planning stage, The Third International Mathematics and Science Study (TIMSS). The Organization for Economic Cooperation and Development (OECD) expressed concern and criticism about the opportunity to learn definition used in several international reports. OECD (1991) felt that when investigating content coverage

the definition of "been taught" should be standardized from country to country and from teacher to teacher. Also, it suggested taking steps to reduce differences in teacher judgment regarding content coverage.

In preparation for the TIMSS, Burstein, et al. (1991) reviewed and displayed various items on opportunity to learn used in studies of achievement in science and mathematics. Some typical items asked of teachers were:

- o What percent of the textbook/workbook would they cover when teaching the course?
- o How many class periods did they devote to a particular topic, e.g., complex numbers in algebra?
- o Did all students study the same content in a class?
- o What was the highest level of coverage reached by the students doing mathematical problems in the class, e.g., memorize, routine problems, novel problems, develop proofs?
- o What was important in determining what they taught on a day-to-day basis, e.g., how important was what the students will need in the next grade or in the next course in the subject?
- o Did they assign homework and how often?

These items reflect a traditional approach to investigating opportunity to learn. They collect information on content exposure that measures the amount of exposure of particular students to instructional experiences (the more time one spends, the more one learns) and content coverage that measures content covered in small units such as individual test items (Wiley, 1990).

The Equity Issue in Public Schools

Opportunity to learn studies did not investigate equity issues in public schools in the United States and in other nations. However, the Special Study Panel on Education Indicators (1991) identified equity as an important issue needing indicators in its report to the NCES. The Panel urged that the nation needed "more sensitive barometers" of students' learning opportunities. In response, Bobbitt (1992) pointed out that NCES is currently investigating some aspects of educational equity; however, there is room for improvement in studying opportunity to learn in the elementary and secondary data collection system.

To expand, at the public school district level, little is known about how or whether there is much concern about addressing opportunity to learn for quality education purposes in general and for equity purposes for poor and minority students in particular. Based on this lack of information, we conducted a survey.

The Study: What's Happening with Opportunity to Learn in the Public Schools

We planned this study to obtain information about how public school districts handle the collection and analysis of student outcome data. Our intent was to determine if the districts have the capacity to analyze opportunity to learn information, what their interest level is in the data, and what obstacles they face in collecting and analyzing opportunity to learn information.

Methods

We mailed a survey form to a purposive sample of research directors and test directors responsible for assessment programs in 142 public school districts. Our purpose was to determine the capacity of their districts to disaggregate and analyze student outcome data and their interest and use in opportunity to learn data. The survey form was accompanied by a paper brief that provided information about opportunity to learn (Appendix A). The paper described why there was a need to conduct educational research in this area.

With our sample, we wanted to reach those responsible for implementing assessment policies and for reporting student outcome information for decisionmaking and accountability purposes. We also wanted to reach people trained in research, evaluation, and assessment. In particular, we wanted to survey as many directors of research and evaluation in the largest U.S. urban public school districts as possible. Therefore, we selected all directors of research and evaluation who attended the annual AERA meeting, the research directors who attended the research liaison meeting of the Council of Great City Schools, and all members of the National Association of Test Directors who worked in public schools. With these selections some overlap in the sampling does exist. To avoid duplication of responses from the same district, the subordinate member's responses were not tallied.

These questions guided the development of the survey items:

1. What is the structure/organization of public school districts' testing programs?
2. What capacity do public school districts have to disaggregate test data by demographics and background information and how interested are they in doing it?
3. What is the interest of public school districts in using opportunity to learn variables and in using different testing processes in the analysis of student data?
4. For public school districts, is the opportunity to learn definition sufficient? Should the definition be expanded?

Following the receipt of the completed surveys, we drew a subsample of at least 20 percent of the respondents, and followed up with telephone interviews to obtain more indepth information regarding their responses.

Analysis

Descriptive statistics give the number and the percentage of responses for each of the items. We also analyzed data across such variables as size of the district, urbanicity, and geographic area of the district. Open-ended responses were summarized into categories. Interview comments provided explanatory information.

Findings

Ninety-one or 64 percent of the 142 school districts we contacted responded to the questionnaire. The respondents' positions ranged from program evaluators to assistant superintendents. However, 56 percent of the respondents were directors and managers of research and evaluation. Sixty-two percent of the respondents came from public school districts located in urban areas. One respondent came from a district in a rural area, and one respondent represented an overseas school district for United States dependents (Figures 1 and 2).

The districts in the sample varied in location and size. Ninety percent were categorized as one of the 500 largest public school districts in the United States (Sietsema, 1991). Twelve had more than 100,000 students and included the five largest districts: New York, Los Angeles, Chicago, Dade County, and Philadelphia. The districts represented each geographic region: Northeast, South, Midwest, and West. The South had the largest representation, 34 percent of the districts; the West, 29 percent; the Midwest, 24 percent; and the Northeast, 12 percent. Sixty-two percent of the districts were in urban areas (Figures 3, 4, and 5).

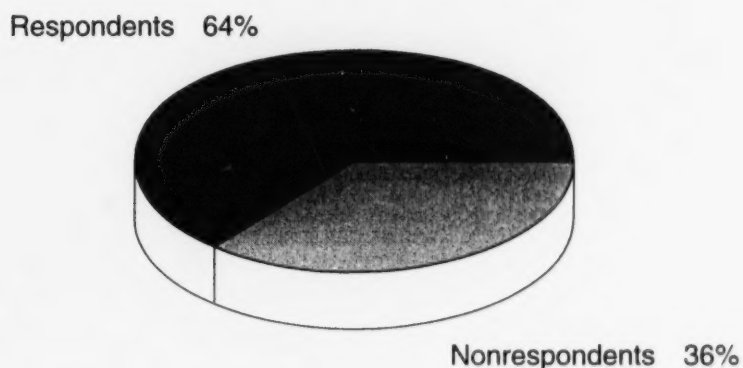
1. What Is the Structure/Organization of Public School Districts' Testing Programs?

How test data are reported.

Test data were reported principally by grade level. The grade level information is organized and reported generally by district and by the school (98 percent of the districts). Next in frequency, test data were reported by individual students (88 percent) and then by classrooms (78 percent).

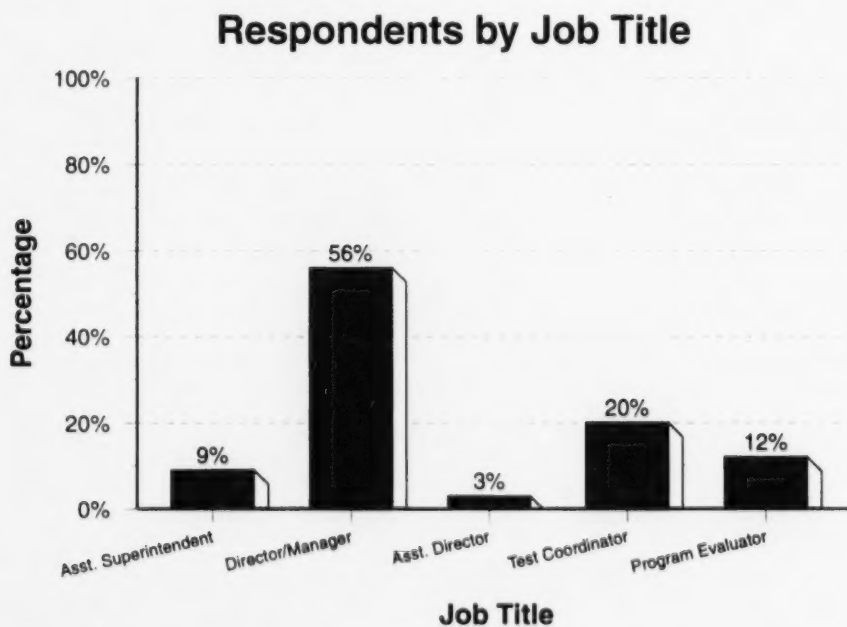
Figure 1. The percent of respondents and nonrespondents from 142 public school districts that were sent survey forms

Sample Respondents and Nonrespondents



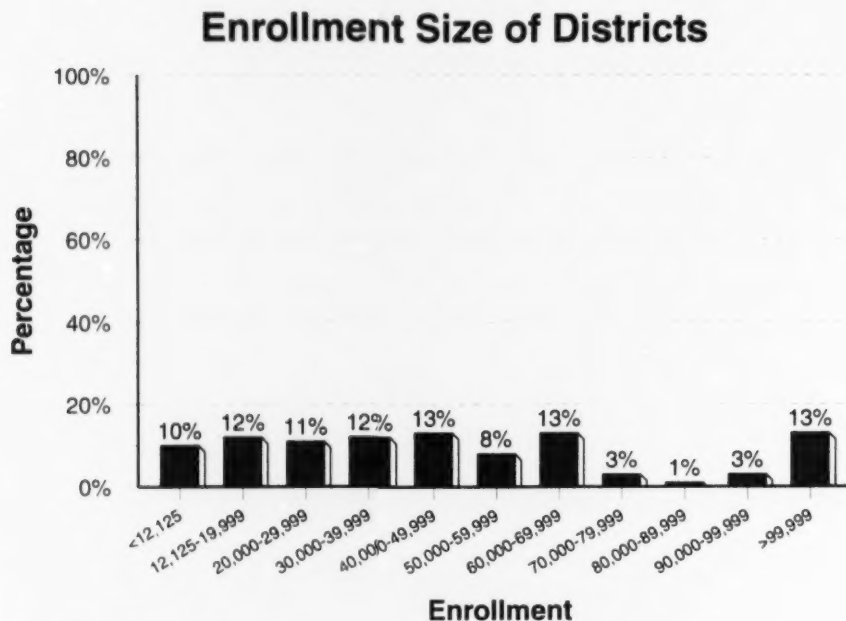
N=142 Public School Districts

Figure 2. Percent of public school district survey respondents by job title



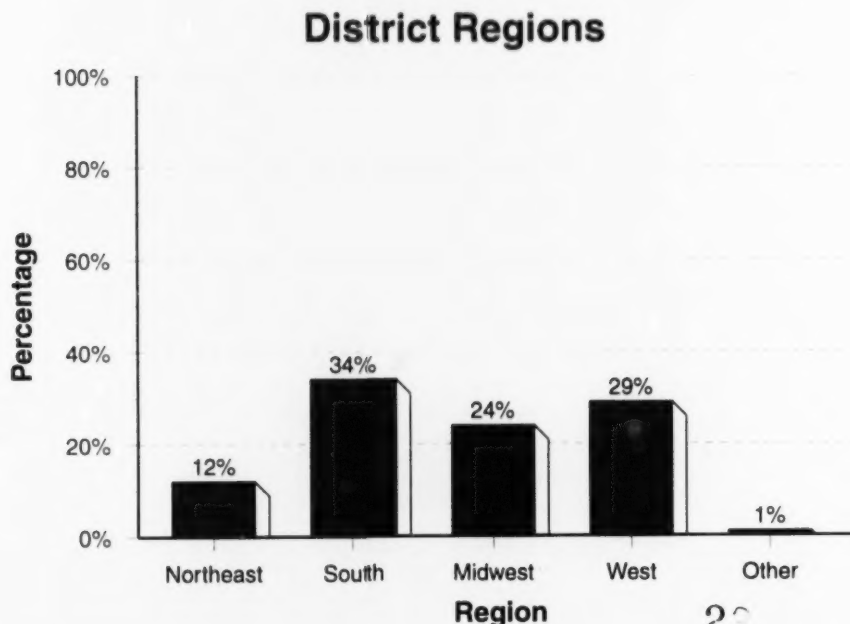
N=91 Public School Districts

Figure 3. The number and percent of public school districts surveyed by student enrollment



N=91 Public School Districts

Figure 4. The percent of public school districts by census region: Northeast, South, Midwest, West, and other (Department of Defense Dependents' Schools)



N=91 Public School Districts

Over 90 percent of the districts tested their students at grades 3, 5, and 8. In contrast, very few, less than half, tested their students at prekindergarten, kindergarten, and grade 12 levels. Six districts tested their students at all grade levels from prekindergarten to grade 12 while most districts tested their students in nine to ten of the 14 grade levels.

In order for school districts to follow individual student's academic progress from grade level to grade level, a continuous assessment program must be in place. From the survey information provided, 70 percent of the districts had grade level information for their students for at least nine of the 14 grade levels (Figures 6 and 7).

Types of assessments.

All but one (99 percent) of the public school districts tested their students with norm-referenced tests while 81 percent used criterion-referenced tests. Less than half (41 percent) used district-wide performance-based assessment to assess academic achievement. To assess reading and mathematics, 98 percent of the districts used norm-referenced tests. Sixty-four percent assessed written language with a norm-referenced test and less than half (46 percent) of the districts assessed science with a norm-referenced test.

The percentages for assessing these same subject areas dropped when the districts used criterion-referenced tests (CRTs). Less than three-fourths (71 percent) of the districts used CRTs for assessing reading, 78 percent for mathematics, 45 percent for written language, and a little over one-third (35 percent) for science.

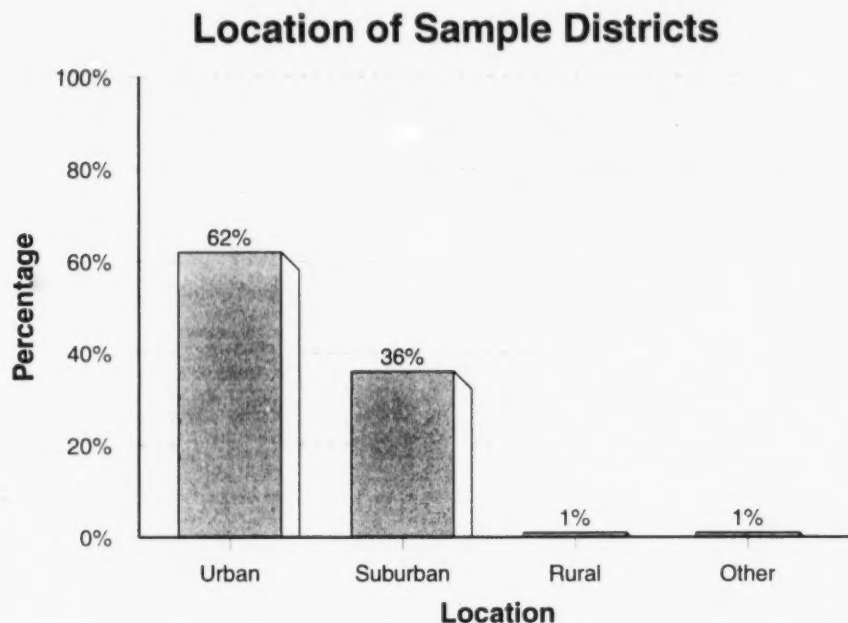
Performance-based assessment was used principally for written language assessment. However, this type of assessment involved only 36 percent of the districts. Overall, less than one-fifth of the districts used performance-based assessment for reading (17 percent) mathematics (13 percent), and science (9 percent). Regardless of the type of test, the assessment of science involved a very low percentage of the public school districts surveyed (Figures 8, 9, 10, and 11).

2. What Capacity Do Public School Districts Have to Disaggregate Test Data by Demographics and Background Information and How Interested Are They in Doing It?

By demographic and background information.

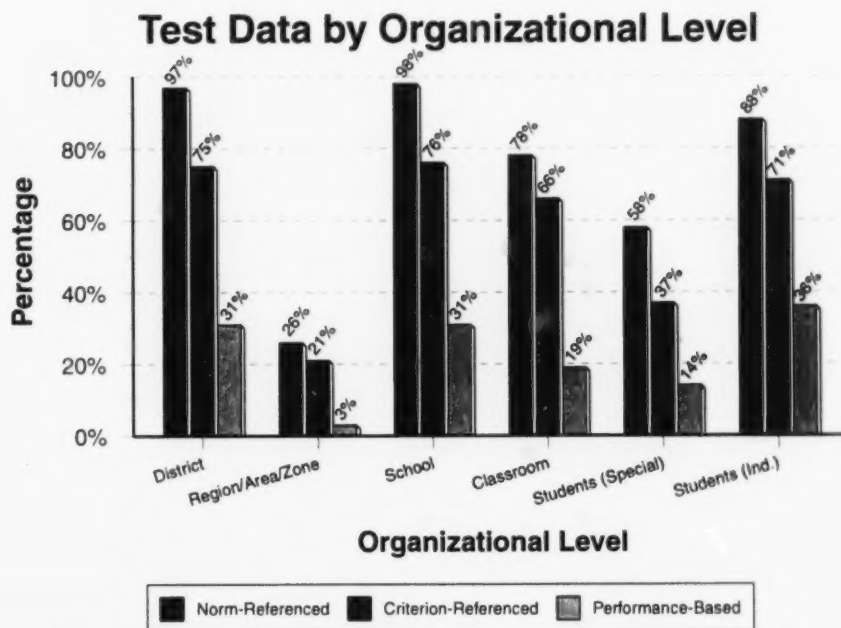
The process of disaggregating test data along different dimensions or variables involves in its simplest form cross tabulations. On the first level of analysis, cross tabulations by demographics allow program staffs, school administrators, and teachers to look at subgroups of students to determine their levels of academic achievement in the various subject areas, e.g., girls on the mathematics applications test at grade 3 or Hispanics boys on the reading vocabulary test in grade 6.

Figure 5. The percent of public school district survey respondents by urbanicity



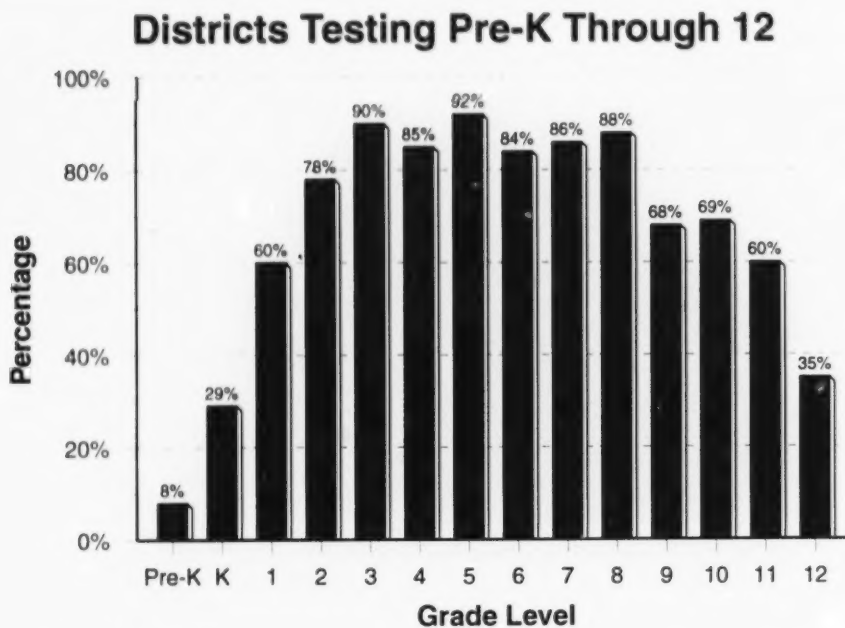
N=91 Public School Districts

Figure 6. The percent of public school districts that report test data by various organizational levels



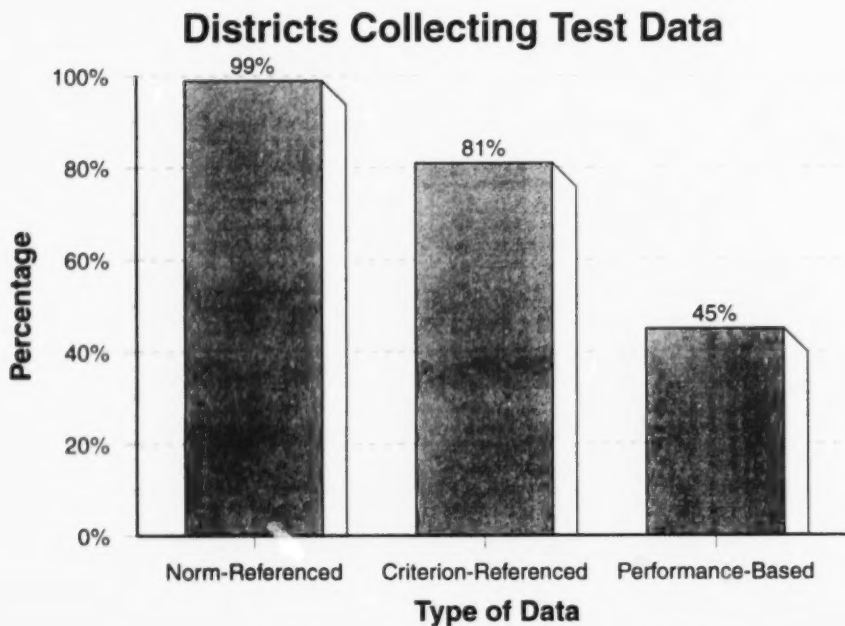
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Figure 7. The percent of public school districts that test at various grade levels, Prekindergarten to Grade 12



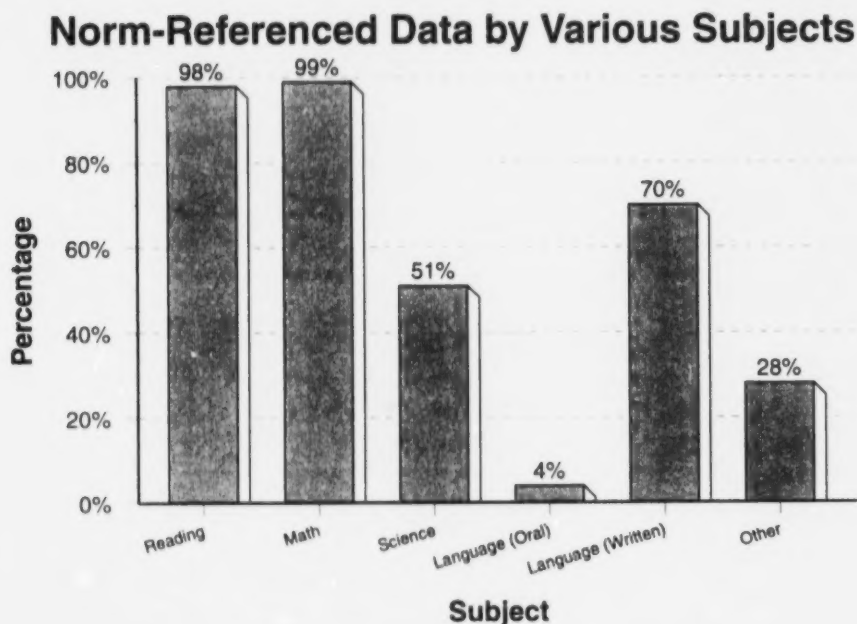
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Figure 8. The percent of public school districts that test students with norm-referenced tests, criterion-referenced tests, and performance-based assessments



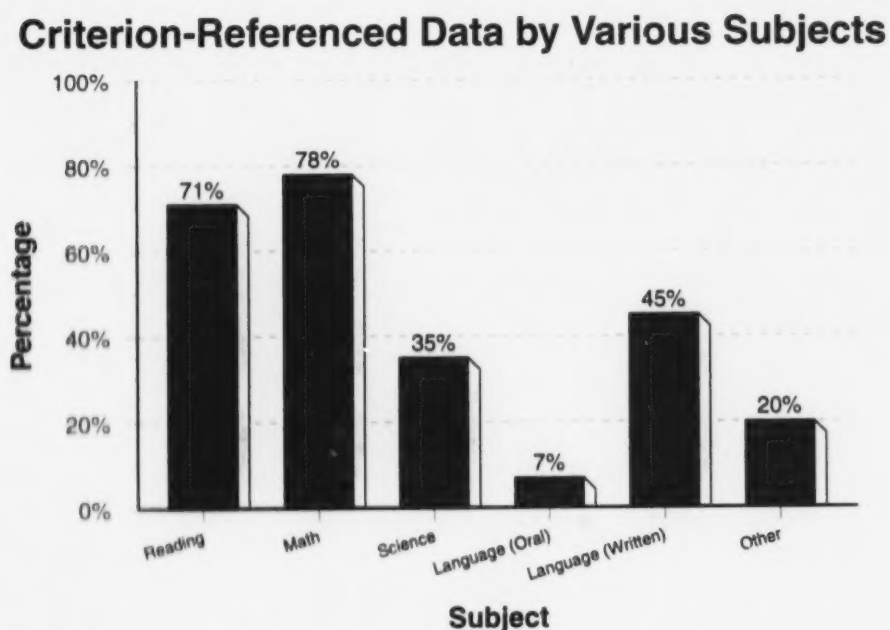
N=91 Public School Districts

Figure 9. Percent of public school districts that use norm-referenced tests to assess students in reading, mathematics, science, language, and other subjects



N=91 Public School Districts

Figure 10. Percent of public school districts that use criterion-referenced tests to assess students in reading, mathematics, science, language, and other subjects



N=91 Public School Districts

It is through this process of disaggregating data that the issues of disproportionality arise and thus begins the analysis of students' opportunity to learn (Hathaway and Kershman, 1988; Braddock, 1990; Stevens, 1990). We were surprised to learn that few districts disaggregated test data using demographic and background information although 82 percent of the districts are capable of doing cross tabulations. The districts who did cross tabulation principally used only three variables: race/ethnicity, socioeconomic status, and gender. Sixty-six percent of the districts partitioned test data by student race/ethnicity, 37 percent by socioeconomic status, and 14 percent by gender. The remaining student demographic variables were used by under 5 percent of the districts.

District use of student and teacher background information to divide test data was extremely low. The percentages were under 5 percent with the exception of students' attendance rates with 13 percent of the districts using this student background variable. The void in implementing disaggregation of test data was not due to prohibitive school district policies. Only 4 percent of the public school districts had these policies (Figures 12, 13, and 14).

The positives and negatives of disaggregating test data

In a follow-up interview with a subsample of the respondents, 18 persons were asked why their districts did or did not disaggregate test data. For those who did, their reasons centered on using the information to find the performance inequities of individual students and to focus on the needs of those students. The districts that did not disaggregate data (predominantly from districts in the South) indicated a fear that the data would be used destructively or in a negative political context. In particular, they felt that presenting test data along race/ethnicity lines might be seen as the principal outcome and not used to find out where resources should be placed to address student needs.

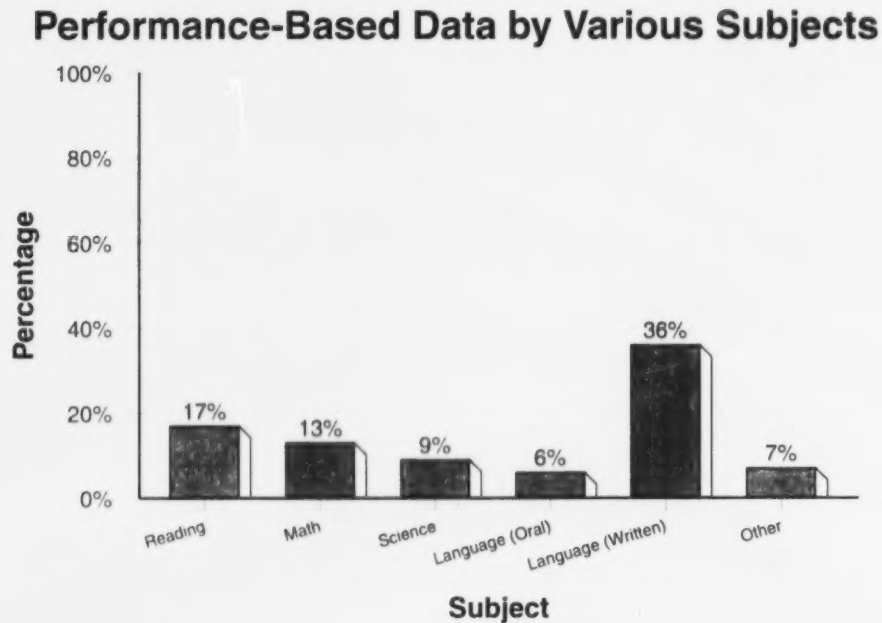
The school districts that did disaggregate test data used the information internally and did not place it in reports to be disseminated to the public. However, 74 percent of the public school districts in the South reported that they disaggregated test data by race/ethnicity compared to 73 percent in the Midwest, 60 percent in Northeast, and 56 percent in the West.

3. What Is the Interest of Public Districts to Use Opportunity to Learn Variables and to Use Different Testing Processes in the Analysis of Student Data?

Using opportunity to learn variables in cross tabulations

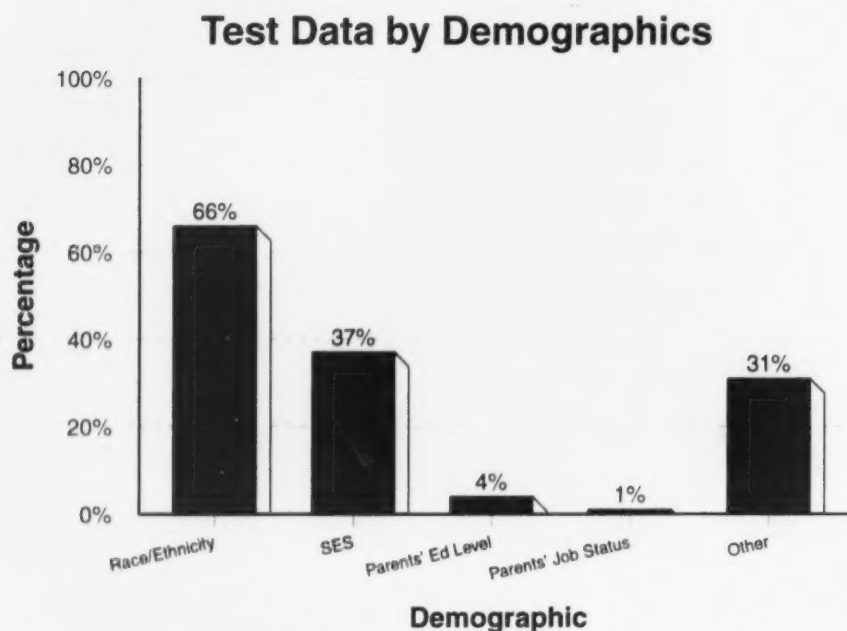
Ninety-two percent of the districts did not use opportunity to learn variables when dividing test data into subgroups (Figure 14). This means that almost all of the districts did not investigate whether different groups of students did or did not have access to the content of the subject matter and the content of the test. Their information was limited to

Figure 11. The percent of public school districts that use performance-based assessments to assess students in reading, mathematics, science, language, and other subjects



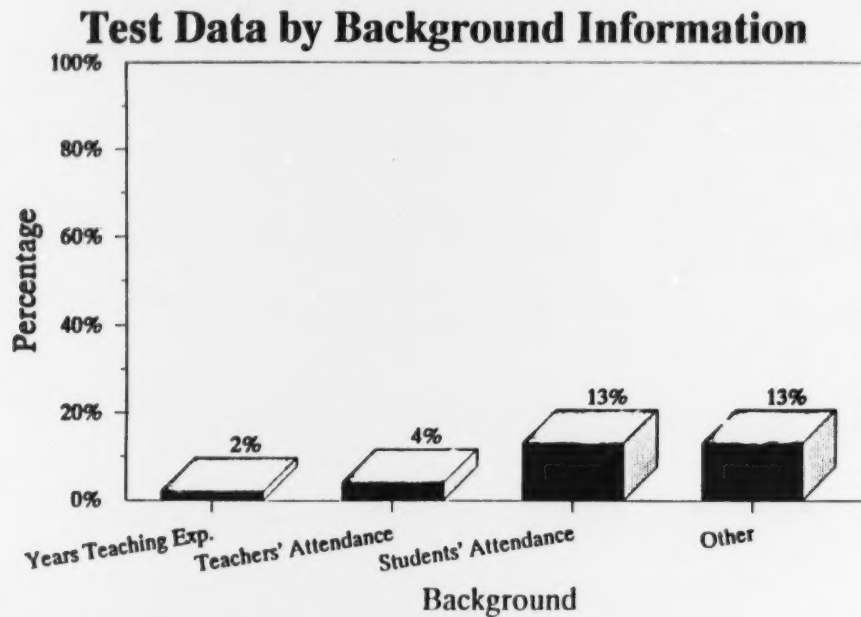
N=91 Public School Districts

Figure 12. The percent of public school districts that analyze test data by demographics



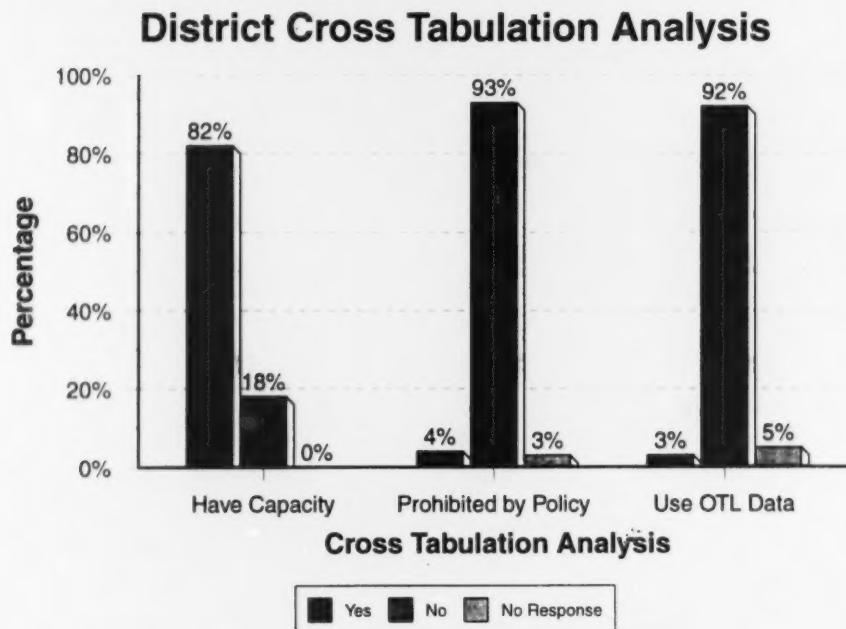
N=91 Public School Districts

Figure 13. The percent of public school districts that report test data by teachers' and students' background information



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Figure 14. The percent of public school districts that have the capacity to do cross-tabulations, have policies that prohibit cross-tabulation analysis, and use opportunity to learn data in cross tabulation analysis



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student demographic and/or background information. There was no information to see if achievement was in any way attributed to teachers' instructional practices.

In follow-up interviews, all of the respondents indicated that variables on opportunity to learn should include the analysis of student outcome data such as test scores. There was a general feeling among those interviewed that using variables on opportunity to learn with student outcome data would help explain student performance and improve instruction.

Validating test score accuracy

Teacher accountability in relation to student performance was seen as a serious issue. For example, it was suggested that student achievement should be reviewed at the teacher level. One respondent stated, "The whole issue of opportunity to learn brings forward the question to what extent has instruction occurred." Respondents stressed the unfairness in comparing classes, schools, or school districts by test scores without ensuring that the content was covered equitably. Without information on opportunity to learn, test scores are meaningless and subject to misinterpretation. However, they cautioned that information on opportunity to learn should not be used to make excuses but used instead to overcome learning deficiencies. One respondent indicated that it was necessary to analyze test data with data on opportunity to learn to move the emphasis from the "victims" to those delivering instruction.

Measuring opportunity to learn

In follow-up interviews, respondents expressed one major reservation about using variables on opportunity to learn to analyze test data. They questioned whether these variables could be quantified in order to conduct the analysis. These expressed concerns pointed out that some of the respondents lacked information about analyzing content coverage, curriculum content and test content overlap, and content emphasis found in previous research studies on opportunity to learn. The previously cited studies on content coverage, content exposure, and content emphasis showed that opportunity to learn variables are measurable. However, Wyatt (1991) cautioned that the current measures of opportunity to learn need to be improved and new measures need to be developed.

The advantage of interval/segmented testing.

Interval or segmented testing divides curriculum assessment into smaller sections or segments versus an end-of-year test that samples the whole year's curriculum. According to the survey, only 23 percent of the public school districts used this assessment process while 54 percent indicated that they did not. However, a more telling statistic was that only 6 percent or 5 of the 91 districts have future plans to implement interval or segmented testing. For this particular question, 64 percent of the respondents gave no responses. This high rate of nonresponse may indicate that interval or segmented testing was a new topic and not previously considered or discussed in their districts (Figure 15).

The values of interval/segmented testing was demonstrated in the Pittsburgh and Los Angeles public school districts (LeMahieu, 1983; Wasney, 1990, 1989). The districts used this type of assessment to monitor students' progressive mastery of subject matter skills.

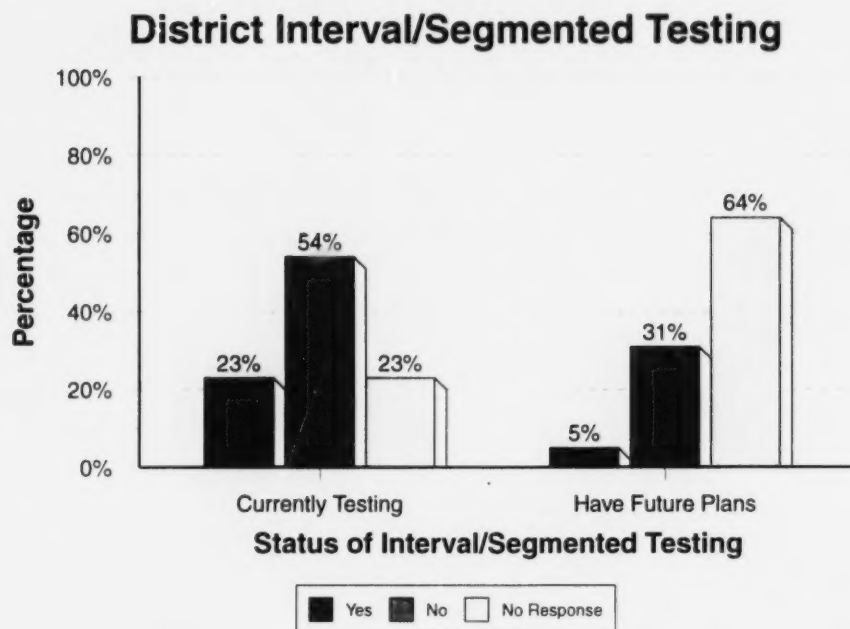
In Pittsburgh, the Monitoring Achievement in Pittsburgh (MAP) project involved the periodic assessment of students in mathematics every 6 weeks. Twenty broad terminal objective/skills and their corresponding 20 items were used in the MAP. There was one item per skill. If a student responded correctly to an item, it was assumed that the skill was mastered. This monitoring program seemed a powerful tool in enhancing the achievement of the students. At all grades, the increase in student performance was much greater in the overlapped areas (curriculum content overlapped the MAP items) than in the non-overlapped regions of the curriculum. Also, it proved to be a method to monitor student opportunity to learn the subject matter through access to the core curriculum.

The Los Angeles Mile Post Testing Program was modeled after MAP. The program differed in that the subjects monitored were limited to reading, mathematics, and language, and the assessment period was every 8 weeks. Also, the students were tested on small groups of items per skill to determine their mastery of the skills, and hopefully, to allow for reteaching by modifying instructional strategies and/or providing remediation activities (e.g., tutoring) for the students.

4. For Public School Districts, Is the Opportunity to Learn Definition Sufficient? Should the Definition Be Expanded?

In response to these survey questions, 41 percent or 37 of the 91 respondents offered suggestions on how to expand the definition while 59 percent did not. Because several respondents appeared uncertain about what opportunity to learn was, they found it difficult to suggest expansions of its definition. One person said, "I have been trying for some time to integrate several concepts in my head and opportunity to learn seems to help this. Specifically, I have been concerned about retention-in-grade, mastery learning, and teaching on the students' instructional level. I believe these are three facets of the same problem: We withhold new information from students who haven't mastered some set of objectives." Another respondent commented that, "I haven't read much about opportunity to learn until your survey came. It has raised my awareness level of (what is) opportunity to learn."

Figure 15. The percent of public school districts that currently have interval/segmented testing and the percent that have future plans for implementing interval/segmented testing



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Including quality of instructional delivery.

Thirty-seven respondents made 62 suggestions to expand the definition of opportunity to learn. Their suggestions could be summarized into six categories: content coverage; content exposure; content emphasis; quality of instructional delivery; students' readiness to learn; and school environment and climate conducive to learning. Four of the six categories are teacher-focused and relate to the issues of this paper. The largest number of the suggestions was for the category entitled quality of instructional delivery. This category received one-third of the suggestions.

The quality of instructional delivery category differed from the traditional definition of opportunity to learn that encompasses the elements of: content coverage, content exposure, and content emphasis. Quality of instructional delivery contains these suggestions for teachers: teach coherent lessons; teach grade level curriculum skills; use varied and appropriate teaching strategies; teach higher levels of skills; and know the subject matter content (Table 3). District level researchers indicated that this category was vital to the investigation of students' opportunity to learn.

Follow-up interviews validated further the survey responses about adding the quality of instructional delivery to the definition of opportunity to learn. The respondents strongly commented on the need for teachers to know the content that they were teaching. Also, they were concerned about teachers being able to handle the curriculum. "Some teachers are having on-the-job-training (to teach)." They stressed the need to upgrade the skills of some teachers so they can "do what is appropriate" and "have more skills and approaches to teaching."

We acknowledge that this particular category would be hard to measure. However, those responsible for reporting student outcome data stressed the importance of having and using this information. This finding certainly indicates that the investigation of quality of instructional delivery cannot be minimized because of the scope of the curriculum and the difficulty of the task.

Table 3. Respondents suggestions to expand the definition of opportunity to learn

Category/Element
Content Coverage
- o evidence of content and test overlap - o access to the core curriculum
Content Exposure
- o time-on-task - o quantity of instruction provided in the subject area
Content Emphasis
- o expectations of students' capacity to learn and achieve - o provision of emotional support for students to learn
Quality of Instructional Delivery
- o teaches grade level curriculum - o uses appropriate teaching techniques and strategies (e.g., has variety of approaches, introduces new skills, reviews skills taught, gives appropriate feedback to students, etc.) - o knowledgeable on subject matter content (e.g., subject credentials, professional experiences) - o teaches subject matter content to students' mastery - o commits to teaching (e.g., attendance rate)
Students' Readiness
- o has English language proficiency - o has language proficiency relative to the subject matter - o attended preschool and/or kindergarten - o has prior instruction and knowledge in the subject area - o attitudes towards learning, school and self - o commitments to schooling (e.g., attendance rate and transiency rate)
School Environment and Climate
- o access to challenging courses and elective choices - o provides quality (appropriate) instructional material - o provides sufficient quantity and variety of instructional materials - o provides special programs for students - o no pull-out instructional programs for some students - o class size

Note: Thirty-seven respondents made 62 suggestions to expand the opportunity to learn definition.

What Do These Findings Tell Us

Opportunity To Learn is Virtually An Unknown Concept in the United States.

As opportunity to learn continues to grow in importance in international studies of academic achievement among countries, the recognition of the importance of using opportunity to learn information in public school districts in the United States has not fully emerged. In fact, at the time of the survey, it was almost an unknown concept to most of those responsible for analyzing and reporting student outcome data in public school districts.

Students' Differences in Academic Achievement Are Not Being Related to an Analysis of Opportunity to Learn.

Opportunity to learn information was not used to question the differences in academic achievement and was not used as a variable to analyze the differences in student outcome data. This was not because public school districts did not have the technical capabilities to do so. In fact, most districts were fully capable, but few chose to implement the process. Instead, they reported test data principally by grade level and organizational level, e.g., district, region, school.

Most Districts Limit the Disaggregation of Test Data to Race/Ethnicity.

The only variable used by over two-thirds of the districts to report test data was race/ethnicity. Although divided by subgroups, the data provided no insight into why these racial groups were achieving differently. This was sufficient if the districts subscribed to the notion that race was the difference. However, several of the respondents in the districts did not disaggregate data by race/ethnicity because of the fear that this type of analysis would be the major outcome.

Lack of Opportunity to Learn Information Hampers Teachers' Abilities to Improve Their Teaching Practices.

Realistically, without analyzing opportunity to learn information, districts using only demographics to disaggregate test data have insufficient information for instructional decisionmaking. Teachers do not group students by race/ethnicity. Instead, they want to focus their teaching practices based on students' learning needs. Presently, little is known about what is actually happening in classrooms that causes some students to achieve and others not to achieve.

As pointed out earlier, previous research studies and survey and interview respondents confirm that investigating whether or not the teachers provided equal access to the curriculum to all students, provided exposure to the subject matter, and emphasized what was important in the curriculum, shifts the responsibility for learning from the students to the teachers. This finding was underscored in several small comparative studies of public schools in Japan, Taiwan, and the United States.

Stevenson and Stigler and their associates moved beyond race (they found no significant differences in cognitive abilities attributed to race) as the explanation for the students in Japan and Taiwan performing better in mathematics than U.S. students (1982, 1985, 1986, 1990, 1991, 1992). They found several important factors related to opportunity to learn that contributed to the differences in student achievement.

One factor was the greater amount of time devoted to mathematics instruction in both Japan and Taiwan, compared to the U.S. classrooms. Another was that children in Japan and Taiwan spend more time on homework than children in the U.S. Related to this, American parents do not help their children as much with their homework. Next, it was noted that learning requires time and practice. When either is reduced, learning is impaired. American children spend less time in academic activities, than the children in the other countries, and Japanese children were more likely to be attentive to their teachers.

Regarding curriculum and instruction, curricula are precisely defined and followed in Japan and Taiwan; whereas, U.S. teachers are allowed to decide what to emphasize according to their desires. In Japan and Taiwan, teachers lead their students more than two-thirds of the time while U.S. children are led less than half the time. U.S. teachers spend more time giving directions than imparting information. Based on these observations, it would appear that U.S. children do not receive the same amount of instructional time in mathematics as do the children in Taiwan and Japan.

External to what teachers do in the classroom but related to their instructional impact was information about parental beliefs. According to the studies, parents who emphasize ability as the most important requisite for academic success may be less disposed to stress the importance of effort. In Japan, more importance is placed on effort and working hard; whereas, in the United States, parents assign more importance on ability.

Using Data on Opportunity to Learn to Improve Teaching.

From the information gleaned from the international and national studies, collecting information on content coverage and content emphasis is an integral equity practice and should occur as part of the teaching and learning paradigm. All of the public school persons responsible for reporting test data indicated that using opportunity to learn variables to analyze student outcome data would be a tremendous breakthrough in

assisting school administrators and teachers to correct and improve teaching and to focus the placement of human and material resources where they are needed the most.

Most School Districts Lag Behind on Analyzing Information on Opportunity to Learn.

Right now, some public school districts attempt to improve the academic achievement of their students by using test data disaggregated by only a few demographic variables. However, the majority of the public school districts do not use any disaggregated information. The question about disaggregating outcome data was necessary because this process could be the first step in implementing an analysis of opportunity to learn information.

Opportunity to Learn Science Cannot Be Analyzed Because Science Is Not Tested.

It is generally believed that district-wide assessment of certain subject matter influences teachers in what they teach. On a national basis, science is seen as one of the major subjects for the future competitiveness of students leaving public schools and entering the workforce. This may be true, but the importance of science was not reflected in reports of what was being tested in the districts we surveyed. If the old statement, "We teach what is tested" is true, science instruction in public schools faces a gloomy future.

Performance-based Assessment Is a Limited Process in Schools.

Performance based assessment is another process that has not fully arrived in the public schools as far as district-wide testing is concerned. Surprisingly, this included written language assessment where only a little over one-third of the districts used performance-based assessment to determine academic achievement.

The Traditional Assessment Mode Continues to Be End-Of-Year Norm-Referenced Testing.

Presently, studying the academic progress of students involves two strands. First is the year-to-year progress that necessitates student assessment at each grade level. We learned that the preferred mode for this assessment is norm-referenced testing followed by criterion-referenced testing.

Second is the progress monitored during the school year. This is usually limited to teacher quizzes and tests given within their classrooms. There are no comparisons to student progress in other classrooms. During the school year, more meaningful progress information could be garnered by using grade level or subject matter interval/segmented

testing. Teachers then know what is happening external to their classrooms throughout the year to segments or groups of grade level skills and/or subject matter concepts. However, most districts relied only on end-of-year assessment information to make decisions about student progress. Less than one-fourth of the public school districts used interval/segmented testing; and only 6 percent indicated that this process was in their future plans. This amounted to 5 of the 91 public school districts.

Interval/Segmented Testing Can Be Used For Determining Students' Opportunity to Learn.

In an evaluation of ten schools in Los Angeles, it was determined that skills and objectives that were taught and then mastered by large percentages of students on the interval/segmented tests later showed similar rates of mastery on the end-of-year norm-referenced test. This same finding was reported for MAP in Pittsburgh. This monitoring process is closely related to opportunity to learn in that it provides information about content coverage and content emphasis.

The tediousness of some of the measurement procedures suggested in previous opportunity to learn research reports could be simplified with shorter numbers of items to analyze over shorter periods of time. In addition, the clustering of skills into smaller segments of time for assessment (e.g., 6 or 8 weeks) allows for quicker attention to the remediation of the skills not mastered.

Quality of instructional Delivery Is a Valuable Addition to the opportunity to Learn Definition.

Last, but not least, were the suggestions to expand the definition of opportunity to learn to include the more difficult concept or variable of quality of instructional delivery. Several researchers who are interested in opportunity to learn as a research topic (Leigh Burstein of UCLA, Lorraine McDonnell of Rand Corp and U.C. Santa Barbara, and Andy Porter of the University of Wisconsin) have talked about the difficulty of measuring this variable. However, the respondents in the public school districts felt that in addition to content coverage, this was a critical variable to use when analyzing students' opportunity to learn in their schools.

Although not expressly called "quality instructional delivery," there exists such research by Stevenson and Stigler and their associates on the international level and from Brophy and Good and the researchers at the Center for Research on Effective Schooling for Disadvantaged Students at Johns Hopkins University on the national level. The Center's recent research emphasizes the importance of looking at quality instructional delivery for disadvantaged students. Also to be noted is the emerging research on teaching excellence from the National Board for Professional Teaching Standards.

On the issue of quality instructional delivery, Jones (1991) points out that there are new visions of learning, curriculum, instruction, and assessment and that schools--teachers and administrators--should be held accountable for using the "best practices." Teachers should be provided with a repertoire of instructional strategies that are effective for teaching all students.

As Wyatt (1991) indicated in his monograph, investigating the various methods of determining opportunity to learn is needed to get the best picture of what is happening in the different classrooms. This investigation should include the quality of instructional delivery as an important element in improving the academic achievement of poor and minority students in the United States.

What Are the Policy Recommendations?

To be effective for all students, teachers need to teach differently (Kennedy, 1991). The public school districts, particularly inner city urban school districts, now serve increasing numbers of poor and minority students. Teachers need to learn how to effectively teach the diverse student populations (poor and minority) now present in the public schools. Business as usual is unproductive and destroys the potential of these students. New instructional practices that are effective for poor and minority students should also be beneficial for all students. However, we will not know the true effects of the old and new practices for different groups of students until opportunity to learn is investigated when analyzing student outcome data. Because of this, there are certain policy recommendations related to the findings of this study that need to be addressed.

Two time frames exist for this set of recommendations. Some can be addressed immediately while others will require structural revisions of procedures and organization within institutions.

First: Raise the Awareness and Knowledge Levels of All Parties Who Are Responsible for Educating Students.

1. Just as there was a summit to develop national goals, a summit should be called by the Department of Education to emphasize the need to teach all curriculum to all students and to improve teaching practices in our public schools. The invitees should be the leadership of the American Federation of Teachers (AFT), the National Education Association (NEA), The National Board for Professional Teaching Standards, The Council of Great City Schools, the organization for schools of education in our colleges and universities, and others. They should convene to learn about and discuss the issues of opportunity to learn with those international and national researchers who have worked in this area.

2. Public school districts must become more aware of the need to investigate students' opportunities to learn when reporting student outcomes and recommending courses of action to address these outcomes. Reporting outcome data by race, socioeconomic status, and gender does not provide the information needed to substantively improve student outcomes. This tells policymakers where the problems are but it does not tell administrators and teachers what to do better in the area of instruction and classroom practices. To focus on where to initiate appropriate change in the schools, classrooms, and schools of education, policymakers should require the reporting of information on opportunity to learn with other student outcome data.

3. The U.S. Department of Education and supportive educational organizations should organize meetings across the nation to promote the concept of opportunity to learn

to administrators and teachers in an effort to bring about change beneficial to all students in our classrooms.

Second: Provide Training for Public School District Personnel to Use Opportunity to Learn Information, to Encourage the Collection of Opportunity to Learn Data, and to Do More Research on the Quality of Instructional Delivery.

4. District directors of research, evaluation, and assessment, information technology specialists, curriculum specialists, teachers, and administrators should be trained to collect and analyze opportunity to learn information. Federal and state agencies should assist public school districts in training their staffs. Without technical assistance, it is unlikely that opportunity to learn data will be collected and analyzed. On a similar note, preservice training of new teachers and administrators in schools of education in colleges and universities should include opportunity to learn as part of their postsecondary education reform efforts.

5. The importance of opportunity to learn information will be recognized by public school districts when federal and state data collection activities include requests for information on opportunity to learn. All new and continuing elementary and secondary studies should include opportunity to learn information.

6. Researchers need to develop "user friendly" methods for determining student opportunity to learn. NCES should fund this type of research to encourage public school districts to collect and use the information to facilitate the Center's collection of this information for federal reports.

7. Research should be conducted on how to operationally define quality instructional delivery better so that survey and other data collection activities can be developed to cover this element of opportunity to learn. Again, NCES should fund this research to facilitate the collection of data for their elementary and secondary reports that provide information to other federal agencies.

Conclusion

Consequences of not changing the way we look at student outcome data have been enumerated many times over, e.g., tracking, dropping out of school, and so on. Research results that reported higher academic achievement by students of other nations generated many questions. Policymakers and researchers were encouraged to expand their collection of opportunity to learn information in an attempt to understand the reasons for the achievement differences. Similarly, policymakers and educators cannot be complacent with the reports of student outcomes based solely on race, socioeconomic status (SES) and gender. Just as the international studies looked beyond race, SES, and gender and looked at the instructional and cultural practices in different countries, researchers must do the same when looking at different groups of students in the United States. Investigating students' opportunity to learn is a viable way to determine if equity exists for all students in our public schools.

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APPENDIX A

Table A. The number and percentage of public school districts in the study by location, enrollment size, and region.

District Characteristic	Number	Percent
All	91	100
Location of the district		
Urban	56	62
Suburban	33	36
Rural	1	1
Other	1	1
Enrollment size		
< 12,125*	9	10
12,125-- 19,999	11	12
20,000-- 29,999	10	11
30,000-- 39,000	11	12
40,000-- 49,999	12	13
50,000-- 59,000	7	8
60,000-- 69,000	12	13
70,000-- 79,000	3	3
80,000-- 89,000	1	1
90,000-- 99,000	3	3
< 100,000	12	13

*Note. Student enrollment above 12,125 comprised the 500 largest public school districts in the United States, 1988-89. There were 177 public school districts in the United States with student enrollment above 25,000 students.

Percentages may not add to 100 due to rounding.

Table B. Public school districts by census regions: northeast, south, midwest, and west.

Region	Number	Percent
Northeast	11	12
South	31	34
Midwest	22	24
West	26	29
Other	1	1
Total	91	100

Table C. Number and percent of respondents by public school district job title.

Title	Number	Percent
Assistant superintendent	8	9
Director/manager	51	56
Assistant director	3	3
Test Coordinator/supervisor	18	20
Program evaluator/researcher	11	12
Total	91	100

Table D. Number and percent of public school districts that test grades pre-k through 12.

Grade Level	Yes		No	
	Number	Percent	Number	Percent
Pre-kindergarten	7	8	84	92
Kindergarten	26	29	65	71
1	55	60	36	40
2	71	78	20	22
3	82	90	9	10
4	77	85	14	15
5	84	92	7	8
6	76	84	15	16
7	78	86	13	14
8	80	88	11	12
9	62	68	29	32
10	63	69	28	31
11	55	60	36	40
12	32	35	59	65

Note: N=91.

Table E. Number and percent of public school districts that collect norm-referenced, criterion-referenced, and performance-based data.

Type of test data	Yes		No	
	Number	Percent	Number	Percent
Norm-referenced	90	99	--	--
Criterion-referenced	74	81	16	18
Performance-based	41	45	46	51

Note: No response: NRT=1; CRT=1; and PBA=4.

Table F. Number and percent of public school districts that collect norm-referenced data by subject area.

Subject	Yes		No	
	Number	Percent	Number	Percent
Reading	89	98	2	2
Mathematics	90	99	1	1
Science	46	51	45	49
Language (oral)	4	4	87	96
Language (written)	64	70	27	30
Other*	25	28	66	72

*Note. Other includes the following subjects: social studies (21), study skills (2), spelling (3).

Table G. Number and percent of public school districts that collect criterion-referenced data by subject area.

Subject	Yes		No	
	Number	Percent	Number	Percent
Reading	65	71	26	29
Mathematics	71	78	20	22
Science	32	35	59	65
Language (oral)	6	7	85	93
Language (written)	41	45	50	55
Other*	18	20	73	80

*Note: Other includes the following subjects: social studies (13), end-of-course (1), foreign language (1), health (4), citizenship (2), study skills (1), home economics (1).

Table H. Number and percent of public school districts that collect performance-based data by subject area.

Type of subject	Yes		No	
	Number	Percent	Number	Percent
Reading	15	17	76	83
Mathematics	12	13	79	87
Science	8	9	83	91
Language (oral)	5	6	86	94
Language (written)	33	36	58	64
Other*	6	7	85	93

*Note. Other includes the following subjects: social studies (2), composition (2).

Table I. Number and percent of public school districts that provide test data by organizational levels.

Organizational level	Type of test data					
	Norm		Criterion		Performance	
	N	%	N	%	N	%
District	89	98	68	75	28	31
Region/Area/Zone	24	26	19	21	3	3
School	89	98	69	76	28	31
Classroom	71	78	69	66	17	19
Students (special groups)	53	58	34	37	13	14
Students (individuals)	80	88	65	71	33	36

Note. N=91.

Table J. Number and percent of public school districts that report test data by demographic characteristics of students.

Demographic	Number	Percent
Race/ethnicity	60	66
SES (or surrogate SES)	34	37
Parents' educational level	4	4
Parents' job status	1	1
Other*	28	31

*Note. Other includes the following: gender (22), language proficiency (2), post high school plans (1), special programs (6), repeater status (1), handicapped (1), Chapter 1 (3), time in the district (2), cohort membership (1).

Table K. Number and percent of public school districts that report test data by teacher and student background information.

Background	Number	Percent
Years of teaching experience	2	2
Teachers' attendance rate	4	4
Students' attendance rate	12	13
Other*	12	13

*Note. Other includes the following: type of magnet (1), limited edition speaking students (1), special education students (2), anticipated grade in the course (1), grade level (1), years in the school (1), years in the district (2), years in the country (1), school SES (1), special programs (1), student mobility (3), parental participation (1), achievement gain from prior year (1), English language proficiency (1).

Table L. Number and percent of school districts which have district-managed interval or segmented testing program, have future plans to have an interval or segmented testing program.

Item	Yes		No		No Response	
	N	%	N	%	N	%
Has interval/segmented testing	21	23	49	54		
o Norm-referenced format	8	9	83	91	--	--
o Criterion-referenced format	15	16	76	84	--	--
Future plans for interval/segmented testing	5	6	28	31	58	64

Note. N=91.

Table M. Number and percent of districts that have the capacity to do cross tabulations, have district policies which prohibit cross tabulations by test data and demographic and background data, and use OTL as a crosstab in their data analysis.

Item	Yes		No	
	Number	Percent	Number	Percent
District office has the capacity to do cross tabulations with demographic and background data.	75	82	16	18
District policy would prohibit cross tabulations of test data with demo- graphic and back-ground data.	4	4	85	93
OTL is used as a cross-tab in data analysis.	3	3	84	92

Note. N=91. No response for policy=2, OTL=2.

Table N. Number and percent of respondents and nonrespondents from sample public schools.

Districts	Number	Percent
All	142	100
Respondents	91	64
Nonrespondents	51	36

Table O. Participating Public School Districts by Region

Region/District	City/State
Northeast (11)	
Boston Public Schools	Boston, Massachusetts
Buffalo Public Schools	Buffalo, New York
East Windsor Regional School	Hightstown, New Jersey
Hartford School District	Hartford, Connecticut
New York City Public School	New York, New York
Newark City School District	Newark, New Jersey
School District of Philadelphia	Philadelphia, PA
Pittsburgh Public Schools	Pittsburgh, PA
Rochester City Schools	Rochester, New York
Springfield Public Schools	Springfield, MA
Troy School District	Troy, New York
Midwest (22)	
Ann Arbor Public Schools	Ann Arbor, Michigan
Black River Falls	Black River Falls, WI
Chicago Public Schools	Chicago, Illinois
Cincinnati Public School	Cincinnati, Ohio
Cleveland Schools	Cleveland, Ohio
Columbus Public Schools	Columbus, Ohio
Dayton City Schools .	Dayton, Ohio
Dearborn Public Schools	Dearborn, Michigan
Des Moines Public Schools	Des Moines, Iowa
Detroit City School District	Detroit, Michigan
Evanston Public Schools	Evanston, Illinois
Grand Rapids Public Schools	Grand Rapids, Michigan
Independent School District #196	Rosemount, Minnesota
Kalamazoo Public Schools	Kalamazoo, Michigan
Kansas City, Missouri Public Schools	Kansas City, Missouri
Madison Metropolitan School District	Madison, Wisconsin
Milwaukee Public Schools	Milwaukee, Wisconsin
Omaha Public Schools	Omaha, Nebraska
Pontiac School District	Pontiac, Michigan
Saint Paul Public Schools	Saint Paul, Minnesota
Toledo Public Schools	Toledo, Ohio
Wichita Public Schools	Wichita, Kansas

Table O. Participating Public School Districts by Region (continued)

Region/District	City/State
South (31)	
Atlanta Public Schools	Atlanta, Georgia
Austin Independent School District	Austin, Texas
Charleston County School District	Charleston, South Carolina
Dade County Public Schools	Miami, Florida
Dallas Independent School District	Dallas, Texas
DeKalb County School District	Decatur, Georgia
East Baton Rouge Parish School District	Baton Rouge, Louisiana
El Paso Independent School District	El Paso, Texas
Escambia County School District	Pensacola, Florida
Fort Worth Independent School Dist.	Fort Worth, Texas
Fulton County Board of Education	Atlanta, Georgia
Garland Independent School District	Garland, Texas
The School District of Greenville Co.	Greenville, South Carolina
Gwinnett County Public Schools	Lawrenceville, Georgia
Hillsborough County Public Schools	Tampa, Florida
Houston Independent School District	Houston, Texas
Irving Independent School District	Irving, Texas
Jefferson County Public Schools	Louisville, Kentucky
Metropolitan Nashville Public Schools	Nashville, Tennessee
Mobile County Public Schools	Mobile, Alabama
Montgomery County Public Schools	Rockville, Maryland
Orange County Public Schools	Orlando, Florida
Pinnellas County Public Schools	Largo, Florida
Polk County Public Schools	Bartow, Florida
Richardson Independent Sch. Dist.	Richardson, Texas
Richmond City Public Schools	Richmond, Virginia
Rockdale County School District	Conyers, Georgia
Saint Lucie County Public Schools	Fort Pierce, Florida
Tulsa City School District	Tulsa, Oklahoma
Wake County Public Schools	Raleigh, North Carolina
York County Public Schools	Yorktown, Virginia

Table O. Participating Public School Districts by Region (continued)

Region/District	City/State
West (26)	
Albuquerque Public Schools	Albuquerque, New Mexico
Anchorage	Anchorage, Alaska
Cherry Creek Schools	Englewood, Colorado
Clackamas County Educ. Serv. Dist.	Merylhurst, Oregon
Clark County School District	Las Vegas, Nevada
Colorado Springs School District	Colorado Springs, Colorado
Corvina-Valley Unified School District	Covina, California
Denver Public Schools	Denver, Colorado
Eugene School District	Eugene, Oregon
Fresno Unified School District	Fresno, California
Highline School District	Seattle, Washington
Long Beach Unified School District	Long Beach, California
Los Angeles Unified School District	Los Angeles, California
Mesa Public Schools	Mesa, Arizona
Mount Diablo Unified School District	Concord, California
Multnomah Educ. Service District	Portland, Oregon
Newport-Mesa Unified School District	Costa Mesa, California
Portland School District	Portland, Oregon
Pueblo School District	Pueblo, Colorado
Rowland Unified School District	Rowland Heights, California
Sacramento City Unified School District	Sacramento, California
Salt Lake City	Salt Lake City, Utah
San Juan Unified School District	Carmichael, California
Tacoma Public Schools	Tacoma, Washington
Washoe County School District	Reno, Nevada
Yakima School District	Yakima, Washington
International (1)	
Department of Defense Dependents Schools (DODDS)	Alexandria, Virginia

Note. N=91 public school districts.



Opportunity to Learn Questionnaire

Name _____ Position Title: _____

School District: _____

Address: _____

Telephone Number: _____
(Area Code)

1. Please check (✓) the grade levels of students tested for the school district's testing program.

Pre-K _____ K _____ 1 _____ 2 _____ 3 _____ 4 _____ 5 _____ 6 _____ 7 _____ 8 _____ 9 _____
10 _____ 11 _____ 12 _____

2. Does the district's testing program collect

a. Norm-referenced test data? Yes _____ No _____
b. Criterion-referenced test data? Yes _____ No _____
c. Performance-based test data? Yes _____ No _____

If yes, please check (✓) the areas

	NRT	CRT	PBA
Reading	_____	_____	_____
Mathematics	_____	_____	_____
Science	_____	_____	_____
Language (oral)	_____	_____	_____
Language (written)	_____	_____	_____
Other (specify): _____	_____	_____	_____
Other (specify): _____	_____	_____	_____

3. At what organizational levels are test data provided? (Check all that apply)

	NRT	CRT	PBA
a. District	_____	_____	_____
b. Region/Area/Zone	_____	_____	_____
c. School	_____	_____	_____
d. Classroom	_____	_____	_____
e. Students (special groups)	_____	_____	_____
f. Students (individual)	_____	_____	_____

4. By what demographic characteristics are test data provided? (Check all that apply)
- a. Race/Ethnicity _____
 - b. SES (or surrogate SES) _____
 - c. Parents' levels of education _____
 - d. Parents' job status _____
 - e. Other (specify) _____
5. By what background information are test data provided? (Check all that apply)
- a. Teachers' years of teaching experience _____
 - b. Teachers' attendance rate _____
 - c. Students' attendance rate _____
 - d. Other (specify) _____
 - e. Other (specify) _____
6. Do you have a district managed interval or segmented testing program?
Yes _____ No _____
- a. If yes, NRT format _____
CRT format _____
 - b. If no, is interval/segmented testing in your future plans?
Yes _____
No _____
7. Does your office have the capacity to do cross tabulations of test data with demographic and background data? Yes _____ No _____
8. Is there a district policy which would prohibit cross tabulations of test data with demographic and background data? Yes _____ No _____
9. Do you use OTL as a crosstab in your data analysis? Yes _____ No _____
10. The following data elements have been used in the opportunity to learn definition:
- . Exposure of students to the curriculum
 - . Time devoted to instruction
 - . Subject matter topics emphasized in classroom

Please list your suggestions to expand the definition of opportunity to learn (OTL).

OTL Data Element

Rationale for Inclusion

1. _____

2. _____

3. _____

4. _____

**OPPORTUNITY TO LEARN: THE NEED FOR
A COMPREHENSIVE DEFINITION FOR SUBSTANTIVE DATA ANALYSIS**

Floraline I. Stevens
AERA Senior Research Fellow
National Center for Education Statistics

Opportunity to learn (OTL) is an important macro variable to be considered when designing surveys, research and evaluations of education issues and for policymaking. Recent publications by Lapointe, Mead and Phillips (1989) and Mullis, Dorsey, Owen and Phillips (1991) report this information under the topic of opportunity to learn. The Lapointe, et al., study defined opportunity to learn as students' exposure to the material covered while the Mullis, et al., study described OTL as the amount of instructional time provided to students, and the subject matter topics emphasized in the classroom. Although both definitions are related, they are different. In addition, both definitions are limited to no more than two variables. Currently, there appears to be no comprehensive operational definition of opportunity to learn.

This is a need to develop a comprehensive definition in order to use this macro variable to ascertain whether or not all participants in a study are in comparable learning situations before definitive outcomes/results are reported. Using opportunity to learn data, coupled with student outcome data provides insight and better understanding about why there are differences in the outcomes/results among various groups. Presently, outcomes are principally reported using demographic variables of gender, race and ethnicity, and parents, educational and income levels as the descriptors. Admittedly the two-variable disaggregation of outcome data is a step forward from global reporting of data; however, the inclusion of opportunity to learn data as a third or fourth variable would provide a more complete description of student outcomes or results.

Discussions about opportunity to learn (OTL) have provided a much wider dimension to this variable and identified far more data elements to be considered. Some are familiar and would be viewed in a different context when investigating opportunity to learn. Although exposure to curriculum and subject matter and the devotion of time to the curriculum certainly contribute to a large part of the OTL definition, another important dimension to be considered is the quality of the delivery of instruction. Quality focuses on the providers of instruction, teachers, and school principals, not the students. For example, teacher attendance or absence has a marked effect on whether the subject matter is covered and effectively delivered to students. Quality of the delivery determines whether or not students master the curriculum. The services of substitute teachers versus the continuous presence of regular teachers will most certainly impact student achievement outcomes. Unfortunately, the substitute teacher factor is more prevalent in

urban, poor schools where there are large numbers of students who are at-risk.

Further investigation of opportunity to learn involves the quality of the regular teacher who is responsible for the delivery of instruction. Various levels of effectiveness of the delivery impacts whether students are able to master grade level curriculum or subject matter. Imbedded in the issue of quality can be teacher certification information, and whether or not inservice training has upgraded teachers, skills and strategies to effectively teach students from various social and cultural backgrounds.

In a recent evaluation of a program planned for students in an inner urban school district (Alkin, Doby, and Lindheim, 1990), the reading scores did not increase. Traditionally, the outcome data would be reported by group (experimental vs. comparison) and by grade level. If expanded further, it would use such background variables as gender, race and ethnicity, and socioeconomic level. However, in this evaluation, case studies were conducted which brought forth information that the reading program had changed to literature-based or core literature, and some teachers had difficulty using this approach. With this information, the opportunity to learn factor of quality of instructional delivery strongly impacted the student outcomes, e.g., reading scores.

These few examples point out that opportunity to learn goes beyond student exposure to curriculum. A more comprehensive definition must also include those elements that impact the effective delivery of instruction. They may include:

- o Interval test data covering segments of the curriculum
- o Teacher attendance rates (substitute teacher days)
- o Remedial/enrichment opportunities (tutoring, computer assisted instruction, monitored homework, etc.)
- o Bilingual instruction for limited English-speaking students
- o Coherent instructional delivery
- o Principal leadership (an environment for learning)

Transforming Qualitative Data into Quantitative Units for the Purpose of Data Analysis

One of the main issues to be resolved with the opportunity to learn variable is how to ascertain the quality of instructional delivery provided to students in classrooms. In the most recent NAEP study by Mullis, et al. (1991), teacher certification and teacher self-reports of teaching activities and instructional emphasis attempted to address this issue as background information, and tangentially in the context of OTL, as a measurable variable. However, there is research on instructional processes and strategies that addresses what successful teachers do in their classrooms. Dole, Duffy, Rochler and Pearson (1991) attempted to answer how reading comprehension instruction should be delivered. They did this by integrating research findings about comprehension processes

comprehension strategies, and teaching strategies to inform instructional practice. In a more general offering of suggestions about reading instructional delivery, Binkley (1986) offered information and suggestions about reading activities and lesson format. Another study by Dorr-Bremme, Keesling, and King (1984) presented research findings based on 3 years of classroom observations regarding reading instructional delivery practices in elementary schools. As in reading research, there is the assumption that similar research findings on instructional delivery are available for mathematics,, science, language arts and other subject matter areas.

The question is: How do you transform these and other research findings on instructional delivery proficiency into quantitative units? Teacher self-reports from guided questions, observational checklists, reviews of lesson plans, homework assignments and other related tasks/materials should be considered in devising a means to quantify what is thought of as qualitative data. Without qualitative information included in OTL, the analysis of student outcomes, particularly academic achievement, would be incomplete.

Lapointe, et al., (1989) in their study transformed ratings of opportunity to learn into values of 1 and 0. Follow-up of the analysis procedures may prove to be helpful.

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OTL Survey Followup Interview Protocol

Name _____ Telephone _____
 School District _____ Code _____

Hello. I am Floraline Stevens. I am calling to talk with you regarding the Opportunity to Learn survey form that you completed and returned to me. First of all, thank you for your support of my research as an AERA fellow at the National Center for Education Statistics, U.S. Department of Education.

This followup interview should only take a few minutes. I need to add some background information about your school district. Also, in response to your comments/ lack of comments about what should be included as elements in the opportunity to learn definition, I need some additional information.

1. What percent of your students are Chapter 1 students? _____ %
2. What percent of your students are white? _____ %
3. How would you describe the academic performance of the majority of the students in school district in reading, mathematics, and written language.

	Above Average	Average	Slightly Below	Below
Reading	_____	_____	_____	_____
Mathematics	_____	_____	_____	_____
Written Language	_____	_____	_____	_____

4.1 (A) On your survey form, you recommended that the following elements should be included to the definition of opportunity to learn:

1. _____
2. _____
3. _____
4. _____
5. _____

4.2 (B) Several of your research and testing colleagues recommended elements for inclusion to the definition of opportunity to learn.
 (Read list of elements.)

5. Would you give your rationale or comments about why any these elements should or should not be included in the opportunity to learn definition.

6. Do you think that opportunity to learn variables should be used in the analysis of student outcome data, e.g., test scores? Yes___ No___ Why?

7. Now that you have had time to think about opportunity to learn, are there additional elements you would like to add to the definition? Why?

8. Any other comments or questions regarding this research would be welcome at this time.

Thank you for your assistance.

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